

Appln. No. 09/836,685
Amendment dated September 26, 2003
Preliminary Amendment Following RCE

The listing of claims will replace all prior versions and listing of claims in the application:

Listing of Claims:

Claim 1 (currently amended) Method for treating optical signals from a source thereof, which comprises the steps of:

- 01
- (a) providing a movable diffractive optical element (MDOE) having a surface carrying a holographic diffraction grating including an array of facets, each of said facets carrying a diffraction grating(s) which are superimposed, each being angularly offset with respect to each other;
 - (b) directing a source of input optical signal(s), each of said input signal(s) being associated with a given wavelength, onto said MDOE to generate output signal(s);
 - (c) supplying one or more output station(s); and
 - (d) moving said MDOE to distribute any said output optical signal(s) ~~among~~ to any said output station(s).

Claim 2 (withdrawn) The method of claim 1, wherein said MDOE is provided as a rotatable diffraction optical element (RDOE).

02
Claim 3 (previously amended) The method of claim 1, wherein said MDOE is provided as a magnet having said holographic diffraction grating attached thereto, and being magnetically coupled to a coil energizable for movement of said magnet and said diffraction grating.

Claim 4 (cancelled)

Claim 5 (withdrawn and currently amended) The method of ~~claim 4~~ claim 2, wherein a selectively movable plate is provided as said MDOE RDOE, said plate bearing said array of facets, each of said facets comprising a post having an outer surface carrying said diffraction grating(s).

Claim 6 (withdrawn) The method of claim 5, wherein said selectively movable plate is provided as a substantially flat, circular plate having an outer periphery and an axis, said posts being disposed about said periphery, said plate being rotatable about said axis.

Claim 7 (cancelled)

Claim 8 (cancelled)

Claim 9 (withdrawn) The method of claim 1, wherein laser diode(s) are provided as said source.

Appln. No. 09/836,685
Amendment dated September 26, 2003
Preliminary Amendment Following RCE

Claim 10 (withdrawn) The method of claim 1, wherein fiber optic cable(s) are provided as said source.

Claim 11 (withdrawn) The method of claim 1, wherein fiber optic cable(s) are provided as said output station(s).

Claim 12 (withdrawn) The method of claim 1, wherein optical detector(s) are provided as said output station(s).

Claim 13 (withdrawn) The method of claim 1, further including the steps of:

- (d) providing a first lens assembly for focusing said source of input signal(s) onto said MDOE; and
- (e) providing a second lens assembly for focusing said distributed output optical signal(s) from said MDOE onto said output station(s).

Claim 14 (withdrawn) The method of claim 2, further including the steps of:

- (d) providing a first lens assembly for focusing said source of input signal(s) onto said RDOE; and
- (e) providing a second lens assembly for focusing said distributed output optical signal(s) from said RDOE onto said output station(s).

Claim 15 (withdrawn) The method of claim 1, further including the step of optically combining selected said output station(s) by combiner(s).

Claim 16 (cancelled)

Claim 17 (currently amended) A system for treating optical signals from a source thereof, which comprises:

a source, a movable diffractive optical element (MDOE), and output station(s), wherein

- 03
- (a) ~~a said source carrying~~ carries input optical signal(s), each of said signal(s) being associated with a particular wavelength;
 - (b) ~~a said~~ movable diffractive optical element (MDOE) ~~having has~~ a surface carrying a holographic diffraction grating including an array of facets, each of said facets carrying a diffraction grating(s) which are superimposed, each being angularly

Appln. No. 09/836,685
Amendment dated September 26, 2003
Preliminary Amendment Following RCE

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offset with respect to each other, said MDOE being positioned to intercept said input optical signal(s) for generating and ~~distributing output optical signal(s), and output optical signal(s) and distributing any said output optical signal(s), to any said output optical station(s) and:~~

- (c) said output station(s) being positioned to receive said output optical signal(s) from said MDOE.

Claims 18 (withdrawn) The system of claim 17, wherein said MDOE comprises a rotatable diffraction optical element (RDOE).

Claim 19 (withdrawn) The system of claim 18, wherein said RDOE comprises a magnet having a holographic diffractive grating attached thereto and being magnetically coupled to a coil energizable for movement of said magnet and said diffraction grating.

Claim 20 (cancelled)

Claim 21 (withdrawn and currently amended) The system of ~~claim 19~~ claim 18, wherein said RDOE comprises a selectively movable plate bearing an said array of facets, each of said facets comprising a post having an outer surface carrying a diffraction grating.

Claim 22 (withdrawn) The system of claim 21, wherein said selectively movable plate is a substantially flat, circular plate having an outer periphery and an axis, said posts being disposed about said periphery, said plate being rotatable about said axis.

Claim 23 (cancelled)

Claim 24 (withdrawn) The system of claim 17, wherein said source comprises laser diode(s).

Claim 25 (withdrawn) The system of claim 17, wherein said source comprises fiber optic cable(s).

Claim 26 (withdrawn) The system of claim 17, wherein said output station(s) comprise optical fiber(s).

Claim 27 (withdrawn) The system of claim 17, wherein said output station(s) comprise optical detector(s).

Appin. No. 09/836,685
Amendment dated September 26, 2003
Preliminary Amendment Following RCE

Claim 28 (withdrawn) The system of claim 17, further including:

- (d) a first lens assembly for focusing said source of input signal(s) onto said MDOE; and
- (e) a second lens assembly for focusing said distributed output optical signal(s) from said MDOE onto said output station(s).

Claim 29 (withdrawn) The system of claim 18, further including:

- (d) a first lens assembly for focusing said source of input signal(s) onto said RDOE; and
- (e) a second lens assembly for focusing said distributed output optical signal(s) from said RDOE onto said output station(s).

Claim 30 (withdrawn) The system of claim 17, wherein selected said output station(s) are optically connected to combiner(s).

Claim 31 (cancelled)

Claim 32 (currently amended) In a method for treating optical signals wherein optical signals provided by fiber optic cable(s) or laser diode(s) as input optical signals are distributed among output stations as output optical signals, each of said output stations comprising optical connector(s) positioned to receive said output optical signals, said optical connectors being selectively combinable to permit any combination of said output optical signals, the improvement which comprises the steps of:

- (a) providing a movable diffractive optical element (MDOE) having a surface carrying a holographic diffraction grating including an array of facets, each of said facets carrying a diffraction grating(s) which are superimposed, each being angularly offset with respect to each other;
- (b) directing said source of input optical signals onto said MDOE to generate output signals, each of said input signals being associated with a given wavelength; and
- (c) moving said MDOE to distribute any said output optical signals among to any said output stations.

Claims 33 (withdrawn) The method of claim 32, wherein said input optical signals are multiplexed.

Claim 34 (withdrawn) The method of claim 32, wherein said input optical signals are demultiplexed.

Claim 35 (withdrawn) The method of claim 32, wherein said input optical signals are switched.

Appln. No. 09/836,685
Amendment dated September 26, 2003
Preliminary Amendment Following RCE

Claim 36 (withdrawn) The method of claim 32, wherein said MDOE is provided as a rotatable diffractive optical element (RDOE).

Claim 37 (withdrawn) The method of claim 36, wherein a selectively movable plate which is substantially flat and circular is provided as said RDOE, said plate having an outer periphery and an axis, said posts being disposed about said periphery, said plate being rotatable about said axis.

Claim 38 (withdrawn) The method of claim 37, further including the steps of:

- (c) providing a first lens assembly for focusing said source of input signals onto said RDOE; and
- (e) providing a second lens assembly for focusing said distributed output optical signals from said RDOE onto said output stations.

Claim 39 (cancelled)